

Work Order ID 132382

132382

Page 1

Item ID: D044-715-011

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Item Name: R44 Cargo Mirror

Stop ***NS2***

Start Date: 5/02/15 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 5/07/15 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: MLJ Date: MAY 11 2015 Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3243	Rev A								
IIN-D044-715	Rev A								
100	Document Control	0.00							
100	DOCUMENT CONTROL								
DC	Memo	0.00							
Doc.Control -USB or Paperwork	Photocopy bluefile & type labels per PPPD044-715-011		CHG003						
110	Pick Kit	0.00							
110									
Packaging	Memo	0.00							
Packaging									

MLJ 1508-25

SEP 09 2015

SEP 08 2015

DAS 26 9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

Work Order ID 132382

May-07-15 2:35:25 PM

132382

Page 2

Item ID: D044-715-011

Accept

N900040100

Setup Start

NS1

Revision ID:

Item Name: R44 Cargo Mirror

Stop

NS2

Start Date: 5/02/15 Start Qty: 1.00

1

Cust Item ID:

Required Date: 5/07/15 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

120

QC4- 100% Inspect kits for completeness

0.00

120

QC

Memo

0.00

Quality Control

SEP 09 2015

DAS

6

9-09

130

Packaging

0.00

130

Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPP D044-715-011

Location: CU

DAS

6

9-09

SEP 10 2015

140

QC21- Final Inspection - Work Order Release

0.00

140

QC

Memo

0.00

Quality Control

MS

SEP 10 2015

20150910

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width: 100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>				Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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OTHER : ☐																					

Picklist Print

May-07-15 2:35:24 PM

Page 1

Work Order ID: 132382

132382

Parent Item: D044-715-011

D044-715-011

Parent Item Name: R44 Cargo Mirror

Start Date: 5/02/15

Required Date: 5/07/15

Start Qty: 1.00

Required Qty: 1.00

Comments:

IPP Rev:A04.02.18New issueKJ/JLM

IPP Rev:B 06-04-28 Manufactured on Water Jet JLM

IPP Rev:C 08-06-10 as per ECN1195p DD verified by:EC IPP Rev:D

11.05.04 remove FE-032-EF DD verified by:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D3243-041 *D3243-041* Bracket		Manufactured	No			110	Each	3.0000	1	1			DAS 26 9-89
				<u>Location</u>				<u>Loc Qty</u>					
				ST490				3				27 9-89	
				124529				3					
D1048 *D1048* Clamp		Manufactured	No			110	Each	25.0000	2	2			DAS 26 9-89
				<u>Location</u>				<u>Loc Qty</u>					
				GA				25				27 9-89	
				132154				25					
D1049 *D1049* Saddle		Manufactured	No			110	Each	19.0000	2	2			DAS 26 9-89
				<u>Location</u>				<u>Loc Qty</u>					
				GA				19				27 9-89	
				115511				1					
				117825				18					

SEP 08 2015

DAS
26
9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width: 100%; border: none;"> <tr> <td style="width: 15%;">Skid-tube ☐</td> <td style="width: 15%;">Cross tube ☐</td> <td style="width: 15%;">Water Jet ☐</td> <td style="width: 15%;">Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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Date :		Step #:		QTY Effective :			MRB (QS1042) Approval																		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																	
Root Cause <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;"> Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ </td> <td style="width: 50%;"> No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐ </td> </tr> </table>		Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	FAULT CATEGORY <table style="width: 100%; border: none;"> <tr> <td style="width: 33%;"> Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ </td> <td style="width: 33%;"> Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ </td> <td style="width: 33%;"> Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ </td> <td style="width: 33%;"> Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐ </td> </tr> </table>						Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	OTHER : ☐											
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Picklist Print

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Page 2

Work Order ID: 132382

Parent Item: D044-715-011

Parent Item Name: R44 Cargo Mirror

132382

D044-715-011

Start Date: 5/02/15

Required Date: 5/07/15

Start Qty: 1.00

Required Qty: 1.00

D2010-104

Manufactured No

110 Each

12.0000

1

DAS
26
9-89

D2010-104

ARM

DAS
6
9-89

**

27
9-89

Location

Loc Qty

Loc Code

ST351

12

124173

2

125122

10

D2011-101

Manufactured No

110 Each

27.0000

1

DAS
26
9-89

D2011-101

Mirror 6"

**

27
9-89

Location

Loc Qty

Loc Code

FG

2

106348

2

ST381

1

122000

1

ST384

24

122000

24

AN3-4A

Purchased No

110 Each

140.0000

4

DAS
26
9-89

AN3-4A

Bolt

**

27
9-89

Location

Loc Qty

Loc Code

CA

108

m129682

108

ST350

32

m129702

32

DAS
6
9-89

M133064

SEP 08 2015

May-07-15 2:35:25 PM

Shop Packet Print

Page 2

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
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Page 3

Work Order ID: 132382

Parent Item: D044-715-011

Parent Item Name: R44 Cargo Mirror

132382

D044-715-011

Start Date: 5/02/15

Required Date: 5/07/15

Start Qty: 1.00

Required Qty: 1.00

AN526C1032R10

Purchased

No

110

Each

65.0000

4

AN526C1032R10

Screw

DAS
6
9-89

Location

Loc Qty

Loc Code

FP001

2

108062

2

ST327

63

m128712

63

110

Each

398.0000

4

ALS4-1032-130

AELS4-1032-130

Purchased

No

AIS4-1032-130

Rivnut

DAS
6
9-89

Location

Loc Qty

Loc Code

CA

398

M128649

398

110

Each

2,081.000

4

NAS1149D0332J

Purchased

No

NAS1149D0332J

Washer

DAS
6
9-89

Location

Loc Qty

Loc Code

CA

14

m129682

14

ST269

1067

m130325

879

m131624

188

ST270

1000

m132189

1000

m132677

SEP 08 2015

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

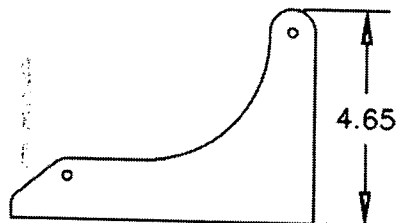
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								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								



DESIGN <i>CP</i>	DRAWN BY <i>CP</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>CP</i>	APPROVED <i>CP</i>	DRAWING NO. D3243	REV. A SHEET 1 OF 1
DATE 04.01.09		TITLE BRACKET	SCALE 1:2
A	04.01.09	NEW ISSUE	



R0.188 (TYP)



D3243-1 BEND DETAIL/
D3243-041 ASSEMBLY
SCALE 1:4

INSTALL
FE-032-EF INSERTS
(4 PLACES)

2.75 ± 0.030
0.000

SHOP COPY
REFERENCE
UNCONTROLLED COPY
SUSPECT OF INACCURACY
NO. 132382 M-5
15-05-11

11.920

11.420

Ø0.201
(TYP 4
PLACES)

Ø0.290
(TYP 4
PLACES)

1.375

5.273

3.714

0.500

0.000

0.750
0.500
0.000

8.581

8.206

7.706

4.214

R0.25 (TYP)

3.339

R0.38
(TYP)

5.494

R2.75
(TYP)

R0.50
(TYP)

D3243-1
FLAT PATTERN

GRAIN
DIRECTION

6.560

5.810

5.360

**D3243-041 BRACKET ASSEMBLY
(D3243-1 BRACKET)**

- 1) MATERIAL: 6061-T6, 0.063 THICK
(QQ-A-250/11, REF DART SPEC
M6061T6S.063)
- 2) FINISH: CHEMICAL CONVERSION COAT
PER DART QSI 005 4.1
POWDER COAT BLACK (4.3.5.7) PER
DART QSI 005 4.3
- 3) BREAK ALL SHARP EDGES 0.005 TO
0.010
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) TOLERANCES ARE PER DART QSI 018
UNLESS OTHERWISE NOTED

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2. GENERAL NOTES

COMPATIBILITY

Compatibility of this installation with the aircraft is the **responsibility of the installer**. Ensure that this installation does not conflict with a previous modification.

CONTINUING AIRWORTHINESS

This installation should be maintained in accordance with the Instructions for Continued Airworthiness ICA-D044-715.

REFERENCE ONLY

3. INSTALLATION INSTRUCTIONS

To install the Dart Cargo Mirror Installation on the R44 skidtube:

1. Locate the D3243-041 Bracket with approximately 0.38" (10mm) space between the top of the skidtube and the bracket, as shown in Figure 2. Transfer drill the 4 holes from the bracket to the centerline of skidtube and enlarge to 10/64" (Ø0.297"). Deburr holes and wet install ALS7-1032-130 inserts using MIL-P-85582 or MIL-P-23377 primer.
2. Install the D3243-041 Bracket on the skidtube using the AN3 hardware. The bolts should be sealed with Sikaflex-241/-291 or Proseal 890 or MIL-S-8802 Class 'B2' sealant before installing as per Figure 2.
3. Install remaining hardware per Figure 2 as required. Adjust the angle of the D2010-104 Arm and tighten the AN526C1032R10 screws to secure arm.
4. To adjust the mirror: loosen (DO NOT REMOVE) the three adjustment screws shown in Figure 2, reposition the mirror, then tighten the screws.

4. WEIGHT AND BALANCE

Installation	Weight	LATERAL		LONGITUDINAL	
		Arm	Moment	Arm	Moment
D044-715-011 Cargo Mirror Installation	1.3 lb 0.59 kg	41.7 in 1.06 m	54.2 lb-kG 0.63 m-kG	32.0 in 0.81 m	41.6 in-lb 0.48 m-kG

5. PARTS LIST

Qty	Part Number	Description
X	D044-715-011	CARGO MIRROR INSTALLATION
2	D1048	Clamp
2	D1049	Saddle
1	D2010-104	Arm
1	D2011-101	Mirror
1	D3014-1	Locknut
1	D3243-041	Bracket
4	ALS7-1032-130	Insert (or AKS7-1032-130, AKS4-1032-130, ALS4-1032-130)
4	AN3-4A	Bolt
4	AN526C1032R10	Screw (or AN526-1032R10)
4	AN960JD10L	Washers
1	*AN960JD416L	Washer

* PARTS ARE INCLUDED WITH D2011-101 MIRROR

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